D 26

WESTON®
MANAGERS DESIGNERS/CONSULTANTS
Roy F. Weston, Inc.
Suite 400
3 Hawthorn Parkway
Vernon Hills, Illinois 60061-1450
708-918-4000 • Fax 708-918-4055

31 May 1994



Mr. William Buller
Project Manager, HRE-8J
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Quality Assurance Project Plan
RCRA Facility Investigation
Technology Company, Inc.
ILD 005 178 975

Dear Mr. Buller:

The purpose of this letter is to clarify the status of the Quality Assurance Project Plan for the referenced project. As was noted in the letter dated 2 March 1994 from Roy F. Weston, Inc. (WESTON•), the QAPP was revised for the second time. In that letter, WESTON stated that it was our understanding that the project remained in compliance with the Consent Order.

WESTON hereby formally requests a waiver of any violation of the Consent Order that may have occurred. In order to promote efficiency on this project, this request will be assumed to have been granted unless an objection is received within ten (10) days of receipt of this letter.

Thank you very much for your assistance and cooperation.

Very truly yours,

ROY F. WESTON, INC.

Carlos J. Serna, P.G.
Senior Project Manager

cc: Henry Lopes, Techalloy
Richard Perlick, Techalloy
Jack Thorsen, WESTON
Joseph M. Boyle, U.S. EPA

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Senior Project Manager

cc: Henry Lopes, Techalloy
Richard Perlick, Techalloy
Jack Thorsen, WESTON
Joseph M. Boyle, U.S. EPA

WESTON-GULF COAST, INC.
2417 BOND STREET
UNIVERSITY PARK, ILLINOIS 60466-3182
708-534-5200 • 219-885-7077 • 815-723-7533
FAX: 708-534-5211

5 May 1994

U.S. EPA Region V
Attn: Wm. Buller
77 West Jackson Blvd., HRE-85
Chicago, Illinois 60604-3590



Re: WESTON-Gulf Coast, Inc.
Techalloy RFI QAP

Dear Mr. Buller,

In response to a request prepared by Robert Gilbertson, I have attached copies of WESTON-Gulf Coast Laboratories' Standard Operating Procedures (SOPs) for the following parameters:

- Ammonia, EPA Method 350.2
- Chloride, EPA Method 325.2
- Nitrate, EPA Method 353.2
- Sulfate, EPA Method 375.4

If you have any questions, please contact me at (708) 534-5200.

Thank you.

Sincerely,

WESTON-Gulf Coast, Inc.

Donna J. McCarthy
Quality Assurance Specialist

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 30 1994

REPLY TO THE ATTENTION OF:

TO: William Buller, RCRA Project Coordinator,
RCRA Enforcement Branch, OH/MN Technical Enf. Sec.

FROM: Patrick J. Churilla, Chemist,
Contract Analytical Services Section PJC

Dennis J. Wesolowski, Section Chief,
Contract Analytical Services Section

SUBJECT: On-site Audit of Weston-Gulf Coast Laboratories for the Techalloy RCRA Facility Investigation

This report describes the findings of the recent USEPA audit of Weston-Gulf Coast Laboratories for the RCRA investigation being conducted at Techalloy Company, Inc. This audit was conducted on June 9-10, 1994 by EPA personnel, Patrick Churilla and Dennis Wesolowski.

The following Weston-Gulf Coast personnel were interviewed during the audit:

| | |
|---|---|
| Ray Federici | Division Quality Assurance Manager |
| Donna McCarthy | QA Assistant |
| Paula Spaulding | Sample Receptionist |
| Dan Knierieman | Organic Extraction Specialist |
| Jody Wojcik | Inorganic Digestion Unit Leader |
| Rada Dobric | TCLP Specialist |
| Jeff James | Bottle Supply Officer |
| Ross Miller | ICP Analyst |
| Dan Smaga | GFAA Unit Leader |
| Cheryl Boyd | Mercury Analyst |
| Joan Klonowski | Cyanide Analyst |
| Janet Allen | Percent Solids Analyst |
| Marilyn Krueding | Volatiles Analyst (GC/MS) |
| Greg Goodwin | GC/MS BNA Unit Leader |
| Donna Koehlert | Volatiles Analyst (GC/FID) |

The following instrumentation and equipment was observed at the laboratory:

1 Thermo Jarrel Ash ICP-61
1 Thermo Jarrel Ash 1100
3 Perkin-Elmer GFAA Zeeman 3030

1 Thermo Jarrel Ash Video 12E
1 Leeman PS200 - Mercury Analyzer
1 Spectronic 1001 - for Cyanide analysis
1 Spectronic 401 - for Sulfate analysis
1 48 Sample TCLP Extractor
2 Hewlett Packard GC/MS Model 5995 - for VOA
2 Hewlett Packard GC/MS Model 5970 - for BNA
1 Varian 3400 GC with Tekmar 4200 heated purge and trap

Weston - Gulf Coast Laboratories has the personnel, equipment and quality assurance procedures necessary for performing the analytical services required for the Techalloy project. For the BNA and Sulfate analyses this lab can be used without any changes. However, our audit produced several findings for the volatiles, metals and cyanide analyses which need to be addressed before we can fully recommend the use of this laboratory for this project. Our findings are divided into three parts; the first consists of minor technical issues which reflect good laboratory practices to avoid potential problems, the second consists of major technical issues which we feel the lab needs to address before sample analysis can begin and the third group lists Quality Assurance Project Plan issues which need to be resolved.

MINOR TECHNICAL ISSUES

1. The acid reagents are not tested before using. Commercially purchased reagents can be a significant source of metals contamination. We recommend that all Lots of reagents be tested before being used in the laboratory.

2. The analytical balance in the inorganic sample preparation area is not protected from drafts and other laboratory influences. We recommend that this balance be placed in a protective enclosure similar to the balance in the organic preparation area.

3. Contamination was observed in the semivolatile and the pesticide/PCB fractions of the example dataset provided by the laboratory. There were several early eluting tentatively identified compounds which shouldn't interfere with the analytes of interest in the semivolatile fraction. In the pesticide/PCB fraction, however, the contamination coelutes with several compounds of interest. Fortunately, for this project, pesticides and PCBs are not being measured. We have seen similar contamination in the past and it was due to dirty sodium sulfate.

4. Preservation of TCLP extracts is covered in Gulf Coast's SOPs by reference to SW-846 method 1311. However, we are concerned about the time between filtering of the TCLP extract and preservation; particularly for cyanide samples since cyanide is fairly volatile. We think that each sample should be preserved immediately after it is filtered instead of filtering a batch of samples then preserving them.

MAJOR TECHNICAL ISSUES

This office recommends that the laboratory not be used until these recommendations are implemented.

1. The pH of all inorganic samples shall be checked at the time of receipt and all volatile samples shall be checked at the time of analysis. The lab should not rely on the Chain-of-Custody as evidence of preservation because the sampler may have preserved the sample incorrectly or switched bottles or the sample itself may alter the pH even if the sampler did everything correctly.

2. Clean-up objectives for several analytes were below the lab's reporting limits so examination of the laboratory's detection limits was necessary. For most of the analytes the laboratory's detection limits were satisfactory. However, due to the special requirements placed on many of the chlorinated hydrocarbons for toxicity purposes lower detection limits are necessary. To meet these limits we propose that EPA method 8010 be used. The lab provided their detection limits for method 8010 which were acceptable.

3. The cis- and trans- isomers of 1,2-dichloroethylene are currently being reported by the laboratory as total 1,2-dichloroethylene. The results for the individual isomers are needed for risk assessment purposes.

4. There is no homogenization of soil samples prior to taking a portion from the jar for metals analysis. The lab mixes the wet sample but does not dry and grind or sieve the soil to get a good representative sample and improve accuracy and precision. Though the objectives are only concerned with TCLP metals and not total metals the TCLP metals still need to have the particles broken into 3/8 inch pieces and sieved before the leaching procedure. This is required by method 1311. The homogenization aspect for total metals is a reproducibility question that should be considered for the site.

QAPP ISSUES

1. The laboratory currently does not have an acceptable naming convention for multiple analyses/dilutions or multiple blanks within a dataset. The dataset that we examined had two blanks designated as SBLK1 and two dilutions of a sample with the same name. This makes it difficult to determine which blank is associated with which samples and which analysis was used to report the results for the sample.

Attached to this report are Weston-Gulf Coast's current method detection limits and SOP's which need to be added to the QAPjP. If you have any questions regarding this audit report please contact Dennis Wesolowski at 886-1970 or Patrick Churilla at 353-5210.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SQ-14J

**MEMORANDUM**

**DATE:** MAY 27 1994

**SUBJECT:** **Conditional Approval** of the Second Revision, Quality Assurance Project Plan (QAPP) for RCRA Facility Investigation (RFI) for the Techalloy Company, Inc., Union, Illinois

**FROM:** Willie H. Harris
Regional Quality Assurance Manager

**TO:** Joseph Boyle, Chief
RCRA Enforcement Branch

**ATTENTION:** William Buller, RCRA Project Coordinator

I am providing a **conditional approval** of the subject QAPP. The Quality Assurance Section (QAS) received the subject QAPP on April 28, 1994, (QAS Log-in No. R177).

The conditions for approval are: 1) correct the QAPP as stated below, and 2) the performance of a laboratory audit.

Correct the following tables:

1. Revise Tables 2-12.1 through 2-12.3 to included the IEPA's clean-up levels.

2. Revise Table 2-14 (Data Quality Objectives) to include the newly added analyses, SVOCs in soil; and ammonia, chloride, nitrate, and sulfate in groundwater.

The Contract Analytical Support Section (CASS) recommends that the laboratory, WESTON-Gulf Coast Laboratories, be audited for the following reasons:

1. The laboratory has not been audited in over two years and the analytical as well as quality assurance procedures may have changed during this time.

2. Written analytical and custody procedures, as provided in the QAPP, are appropriate. An on-site audit would confirm that they are being followed.

3. The IEPA's clean-up objective concentration levels are slightly lower than the laboratory's reporting limits, it is necessary to examine the laboratory's method detection limit (MDL) data for the analytical protocol being used for this project. The laboratory's MDLs are probably lower than their reporting limits.

4. An on-site audit is recommended to confirm that the laboratory has all of the necessary equipment.

An audit request form must be submitted to Dennis Wesolowski, Chief of the CASS of MQAB. If there are any questions regarding this memorandum, the Project Coordinator can contact Denise Boone of my staff.

I have signed the attached signature page. Please have the Project Coordinator provide final sign-off. We would like to receive a copy of the completed signature page within the next two weeks.

Attachment

cc: Michael DeRosa, HRE-8J

# FINAL QUALITY ASSURANCE PROJECT PLAN FOR THE RCRA FACILITY INVESTIGATION TECHALLOY COMPANY, INC. UNION, ILLINOIS

March 1994

Prepared and Approved by: _____ Date: 3/23/94
Carlos J. Serna, P.G., WESTON
Project Manager

Approved by: _____ Date: 23 MARCH 94
Robert H. Gilbertsen, P.E.
Lead Project CMS Investigator

Approved by: _____ Date: 28 March 1994
John W. Thorsen, P.E., WESTON
Project Director

Approved by: _____ Date: _____
Raymond J. Frederici
Laboratory Quality Assurance Manager

Approved by: _____ Date: 3/28/94
Henry Lopes, Techalloy Company, Inc.
Vice President

Approved by: _____ Date: 7/19/94
William Buller, U.S. EPA
RCRA Project Coordinator

Approved by: _____ Date: 5/27/94
Willie Harris, U.S. EPA
Regional Quality Assurance Manager

Approved by: _____ Date: _____
Charles Elly, U.S. EPA Region V
Director, Central Regional Laboratory

Approved by: _____ Date: 3/23/94
Robert C. Brod
Quality Assurance Manager

Work Order No. 01989-009-001-0040

Roy F. Weston, Inc.
Suite 400
3 Hawthorn Parkway
Vernon Hills, Illinois 60061-1450
708-918-4000 • Fax 708-918-4055

2 March 1994



Mr. William Buller
Project Manager, HRE-8J
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

W.O. No.: 01989-009-001

Re: Quality Assurance Project Plan
RCRA Facility Investigation
Techalloy Company, Inc.
ILD 005 178 975

Dear Mr. Buller:

To confirm our recent phone conversation (23 February 1994), U.S. EPA has directed WESTON to address U.S. EPA's second round of comments (8 February 1994) on the Techalloy QAPP (Revision 1, September, 1993). WESTON has requested, and U.S. EPA has agreed, that the deadline for the revisions or responses is 30 days from our conversation (25 March 1994). It is WESTON's understanding that the project remains in compliance with the Consent Order during this period of revision. WESTON has requested, and U.S. EPA has agreed, that historical information be presented just once, in the work plan. The QAPP will address history by cross-referencing to the work plan.

As we discussed, two troubling categories of comments are causing difficulty. First, old topics that were negotiated and resolved have reappeared as comments. Second, new topics that were never a problem before have now emerged as concerns of reviewers.

WESTON has expressed its concern that certain issues were resolved during the pre-QAPP meeting (23 March 1993) , but have now emerged again as new comments in U.S. EPA's latest comments. A comment letter attached to the QAPP revision will identify such comments and explain how they were resolved.

WESTON has also expressed its concern over the reviewers' comments branching out into new topics. We had expected that the reviewers would confine the scope of their comments to the revisions to the text and issues relating to comments on Revision 0 of the QAPP. It is common practice for the second-round comments to be confined to issues raised in the first round. This concern will be even more important in the next round of review. It would help in obtaining approval of this plan if you could please instruct the QAS reviews that this is a third time review of the plan and that comments should focus only on responses to comments.

We look forward to beginning the field work soon. We appreciate your assistance in getting started.

Very truly yours,

ROY F. WESTON, INC.

Robert H. Gilbertsen, P.E.
Project Engineer

Carlos J. Serna, P.G.
Senior Project Manager

cc: Henry Lopes (Techalloy)
Joseph Boyle (U.S. EPA)
Kevin Lesko (IEPA)
Jack Thorsen (WESTON)

WESTON®
MANAGERS DESIGNERS/CONSULTANTS
THREE HAWTHORN PARKWAY, SUITE 400
VERNON HILLS, IL 60061-1450
708-918-4000 • FAX: 708-918-4055

2 September 1993

Mr. William Buller
RCRA Enforcement Branch, HRE-8J
United State Environmental Protection Agency
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

W.O. No.: 01989-009-001

Re: Revisions to RFI QAPP
Techalloy Company, Inc.
Union, Illinois

Dear Mr. Buller:

Roy F. Weston, Inc. (WESTON®) has completed revisions to the Quality Assurance Project Plan (QAPP) for the RCRA Facility Investigation (RFI) at Techalloy Company's Union Illinois Facility. The changes reflect the comments that you faxed to WESTON on 4 August 1993. We are retaining the designation "Draft Quality Assurance Plan" on the as the title of the document until you notify us that the plan is approved.

We look forward to hearing from you. If you have any questions, please call.

Very truly yours,

ROY F. WESTON, INC.

Carlos J. Serna, P.G.
Senior Project Manager

cc: Kevin Lesko, IEPA
Henry Lopes, Techalloy
Rick Perlick, Techalloy

Attachment A -- WESTON's Responses to U.S. EPA's Comments
Attachment B -- Instructions for Inserting Replacement Pages
Enclosure -- Replacement Pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

**MEMORANDUM** **SQ-14J**

**Date:** NOV 24 1993

**Subject:** Review of Revision Zero for the Quality Assurance Project Plan (QAPP) for RCRA Facility Investigation of Techalloy Company, Inc., Union, Illinois

**From:** George Schupp, Chief
Quality Assurance Section

**To:** Susan Sylvester, Chief
IL/IN Technical Enforcement Section

**Attention:** William Buller, RCRA Project Coordinator

The Quality Assurance Section (QAS) has reviewed the subject QAPP which was received by the QAS on October 15, 1993 (QAS Log-in No R161). The QAS does not recommend the approval of the subject QAPP at this time.

The attached comments itemize the QAPP deficiencies and provide guidance for their correction. If Mr. Buller does not submit our comments as is, we recommend he discuss his final comments with us. We recommend that Mr. Buller request Techalloy through their contractors to submit the response to our comments and include the corrected pages only. If there are any questions regarding this memorandum, Mr. Buller can call Al Alwan, of my staff, at 353-2004.

Attachment

CC: D. Wesolowski, SLL-10C
M. DeRosa, HRE-8J

QAS comments on Techalloy Inc., Union, IL

1.0 TITLE AND APPROVAL PAGE

a. Change the name for the Regional Quality Assurance Manager to Willie Harris.

b. The laboratory QA Manager should be added.

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

2.1.1 OVERALL PROJECT OBJECTIVES

This section is missing, please provide specific information.

2.1.2 PROJECT STATUS/PHASE

This section is missing, please provide specific information.

2.2 SITE/FACILITY HISTORY

2.2.1 PAST DATA COLLECTION ACTIVITIES

a. Provide the specific analytical methods that were used, with compounds and detection limits, for all analysis.

b. Specify the sampling technique used to collect the historical data.

c. Summarize the results of past activities we are not familiar with these investigations and the approach that was used.

d. Explain why only dissolved metals were used to trace the metals mobility.

e. What are the limitations of the "Groundwater probe-headspace" technique? Provide specifics on the capability.

f. Table 2-8 page 2-24/56, what does "on-site off-site objective" mean, please explain.

g. Section 2 page 40, explain why TCLP metals were used to characterize the soil?

h. Figure 2-10 page 33, we can not locate TT3 and TT4, please provide direction.

i. Section 2 page 40, Drum Storage area:

I. What is the status of these drums, i.e., are they leaking, how big are they, what was stored in them, have they been characterized?

II. It was not clear what work has been done on this area that made the contractor conclude that only volatile compounds and metals were found. Please explain if chemical analysis was performed and if so what analytical methods were used.

2.3.3 CURRENT STATUS

a. Summarize what is the current status?

b. Had a geological model been drawn for the plume location? If one has been done please provide, if not we recommend preparing and providing one for this phase.

c. Section 2 page 38, in the discussion of the "source areas", explain how could the contractor come to conclusion about the contamination distribution if "the precise spatial distribution are not known"?

d. Table 2-11 page 41, the previous three closure SWMUs, why there were no volatile or other organic compounds?

e. Tables 2-12 page 42-44, the five SWMUs:

I. Confirmatory samples must be taken and analyzed for specific Project Target Limits (using the right analytical methods) to establish what are the contaminant at Techalloy.

II. What sampling technique used to determine the migration pathways?

III. Provide the number of samples, locations and analytical methods used to determine the conclusion for the chemical

IV. If bailers used and only filtered samples were analyzed the migration pathways for metals is questionable. Provide specifics on what has been done.

V. Section 2 page 45&46 potential receptors:

1. Is there a model that will support the conclusion? Provide information.

2. What were the sampling and analysis used by PRC consultant and Techalloy? The information may be used to answer the inconsistency in the results.

2.4 PROJECT OBJECTIVES

2.4.1 SPECIFIC OBJECTIVES AND ASSOCIATED TASKS

a. Specify the objectives for each task and define what decision will be made on each results.

b. Section 2 page 48, the use of evaluation and statistics is very good idea. But it is not clear how that will be done for Techalloy Facility, please specify. We encourage the contractor to depend on the False Positives and Negatives in deciding the number of samples for each decision they need to make.

c. Section 2.3 page 46, the purpose of the RFI as stated should be expended. The following is an example on one purpose. We recommend that this to be followed for the reset.

I. Purpose number 1: "gather sufficient information to determine the vertical and horizontal extent and magnitude of constituents in the five SWMUs".

1. What compounds, at what levels and for which matrix will trigger each decision.

2. Location and number of samples needed to make a decision on both

the vertical and horizontal.

3. Specify what will satisfy the "sufficient information" at this stage of the project. This is the time and place to include the different possibilities. One cannot change as the implementation in process.

4. What are the specific decisions that have to be made for each results collected.

5. Specifically how the results will be incorporated in the Corrective Measures Study.

6. How does the results of Phase I will incorporated in Phase II.

2.4.2 PROJECT TARGET PARAMETERS AND INTENDED DATA USAGES

a. The intended data use must be specified for each data generations activities.

b. The Project Target Parameters and their limits for each matrix must be listed here. This list must not be referenced to SOP, CLP or SW846 analytical methods. Techalloy must come up with this list based on:

I. Any legal agreement that has been signed with Federal or State agencies. This could be the same as the "State Cleanup objectives for Techalloy, Inc. October 7, 1991" or any others.

II. Information based on the activities at the Techalloy facility, chemical processes and the raw materials used.

III. Techalloy has to state that based on their information this is the compounds list out of Appendix 9 that may be found on the facility.

c. Section 2 page 48, specify the semivolatile compound that will be analyzed with the

action limits for each matrix.

d. Section 2 page 49, provide the number and location with specific definition of how the background samples will used.

2.4.2.1 FIELD PARAMETERS

If there are any chemical parameters, provide specific project target limits for each matrix.

2.4.2.2 LABORATORY PARAMETERS

a. See comment 2.4.2 above.

2.4.3 DATA QUALITY OBJECTIVES (DQO)

Specify the objectives for each step of this project with the associated decision that will be made for the results. These DQOs should be specifics and measurable, i.e., the DQOs degree of satisfaction could be assessed and reported as the project progress.

2.5 SAMPLE NETWORK DESIGN AND RATIONALE

2.5.1 SAMPLE NETWORK BY TASK AND MATRIX

a. Table 2-13 page 50:

I. Is information available about what does the Oil contain in Area BG-5? Was any Oil analysis for BG-5 Area done? Is soil samples will have some Oil? What consideration will be exercised for those samples?

II. What is the rational for using different number of samples for each Area?

III. Is the number of samples for each units was considered in term of the statistical test that was proposed?

b. What is the rational to analyze for semivolatile in ground water and not in the soils where one might expect to find them?

c. What is the rational for not analyzing for Total Petroleum Hydrocarbon specially when it was detected before?

3. SAMPLING PROCEDURES

3.1 Field QC Sample Collection/Preparation Procedures

a. Section 3.2 page 6:

I. Recommend the use of slow flow rate pump for both purging and sampling ground water.

II. Recommend the sampling be done after the Turbidity, Dissolved Oxygen and Redox has been stabilized.

III. The ground water samples for metals should be analyzed for both filtered and unfiltered samples.

b. Section 3.6 page 14, recommend the use of better sampling procedures, the new procedure should minimize the atmospheric exposure of soil sample both during sampling, containerized and transportation.

c. Section 4.4 page 3, recommend the use of Trip blank for each shipment of samples that will be analyzed for volatile organic compound both water and soil.

4.0 ANALYTICAL AND MEASUREMENT PROCEDURES

4.1 Laboratory Analytical & Measurement Procedures

When the Project Target Limits has been submitted (see comment 2.4.2 above) the laboratory SOPs will be evaluated to see if it could achieve the Project objectives.

4.2.1 List of Project Target Compounds & Detection Limits

Each SOP must have all the compounds of interest at the level needed.

5.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

5.1 Contents of Project QA Reports

**QAS comments on Techalloy Inc., Union, IL**

Recommend including the Data Quality Assessment as an item to report on, i.e., what are the progress and how far are the Data Quality Objectives been satisfied.